



[10191/4350]

**THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant(s) : SCHUMACHER, Hartmut et al.
Serial No. : 10/590,876
Filed : July 10, 2007
For : DEVICE FOR SUPPLYING AN IGNITION CURRENT FROM AN
ENERGY RESERVE TO AT LEAST ONE IGNITION POWER
MODULE

Art Unit : 2836
Examiner : Michael RUTLAND-WALLIS
Confirmation No. : 3753

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APPELLANTS' APPEAL BRIEF
UNDER 37 C.F.R. § 41.37

S I R :

Applicants electronically filed a Notice of Appeal dated March 11, 2011, appealing from the Final Office Action dated November 15, 2010, in which claims 7-11 and 13 of the above-identified application were finally rejected. This Appeal Brief is being submitted by Applicants in support of their appeal.

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I. REAL PARTY IN INTEREST

The real party in interest in the present appeal is Robert Bosch GmbH of Stuttgart, Germany. Robert Bosch GmbH is the assignee of the entire right, title, and interest in the present application.

II. RELATED APPEALS AND INTERFERENCES

No appeal or interference which will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal is known to exist to the undersigned attorney or is believed by the undersigned attorney to be known to exist to Applicants.

III. STATUS OF CLAIMS

Claims 7-11 and 13 are currently pending in the present application, stand rejected and are being appealed. Claims 1-6, 12 and 14-15 have been canceled. Among the appealed claims, claim 7 is independent.

IV. STATUS OF AMENDMENTS

Subsequent to the final Office Action mailed on November 15, 2010, Applicants mailed "Rule 116 Amendment" on February 9, 2011, in which Amendment claims 14 and 15 were canceled. The Examiner indicated in the Advisory Action of February 23, 2011 that the "Rule 116 Amendment" would be entered. Therefore, the rejections of claims 14 and 15 indicated in the Final Office Action have been rendered moot and are not presented for review on appeal.

V. SUMMARY OF CLAIMED SUBJECT MATTER

As recited in independent claim 7, the present invention provides a device (Fig. 1, device 100) for supplying an ignition current from an energy reserve capacitor (Fig. 1, ER) to at least one ignition power module (Fig. 1, element 107), the device including:

a voltage regulator (Fig. 1, element 102) connected to the energy reserve capacitor (Fig. 1, ER) by a polarity reversal diode (Fig. 1, element 109) and at least one current source (Fig. 1, element 101), the voltage regulator (Fig. 1, element 102) being directly connected to the at least one ignition power module (Fig. 1, element 107) such that the voltage regulator sets a voltage at

the at least one ignition power module at a predetermined level; (Substitute Specification, p. 4, l. 6-18); and

a control module (Fig. 1, element 103) which selectively triggers the voltage regulator (Fig. 1, element 102) to alternatively operate as a safety semiconductor (p. 4, l. 18-21).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review on appeal in this case:

(A) Whether pending claims 7 and 10 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent Application No. 2006/0012941 ("Heckel") in view of U.S. Patent No. 6,731,023 ("Rothleitner").

(B) Whether pending claim 8 is unpatentable under 35 U.S.C. § 103(a) over Heckel in view of Rothleitner and U.S. Patent No. 5,845,729 ("Smith").

(C) Whether pending claim 9 is unpatentable under 35 U.S.C. § 103(a) over Heckel in view of Rothleitner, Smith and U.S. Patent No. 5,459,449 ("Ravas").

(D) Whether pending claim 11 is unpatentable under 35 U.S.C. § 103(a) over Heckel in view of Rothleitner and Ravas.

(E) Whether the rejection of claim 13 without stating any specific ground of rejection is proper.

VII. ARGUMENTS

A. Rejections of Claims 7, 10, and 14 under 35 U.S.C. §103(a)

Claims 7 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application No. 2006/0012941 ("Heckel") in view of U.S. Patent No. 6,731,023 ("Rothleitner"). Applicants respectfully submit that the rejection should be reversed for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), the prior art must teach or suggest each element of the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990). To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. M.P.E.P. §2143. In addition, as clearly indicated by the Supreme Court, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. See KSR Int’l Co. v. Teleflex, Inc., 127 S. Ct. 1727 (2007). In addition, all the teachings of the prior art must be considered, including those which teach away from the claimed invention. (See MPEP 2143.01.II). To the extent that the Examiner may be relying on the doctrine of inherent disclosure to support the obviousness rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

First, Heckel is not a valid prior art reference against the present application. The present application has an effective U.S. filing date of January 10, 2005 (the filing date of parent PCT application). Since Heckel is a national-phase application based on a PCT application (PCT/DE03/03193) published in German, there is no effective 35 U.S.C. 102(e)(1) date for the published U.S. national-phase application. (See MPEP 706.02(f)(1), Example 5). In addition, since Heckel was published in 2006, after the effective U.S. filing date of the present application, Heckel is not a valid prior art under any provision of 35 U.S.C. 102. For at least this reason, Heckel is not a valid prior art reference against the present application, and the obviousness rejection cannot be sustained since the secondary Rothleitner reference (which is cited merely for teaching a polarity reversal diode) fails to teach or suggest all the features of independent claim 7. Reversal of the obviousness rejection is required for at least this reason.

Independent of the above, even if Heckel were a valid prior art reference, which is not the case, Applicants submit that the overall teachings of the applied Heckel and Rothleitner references do not support the obviousness rejection. Claim 7 recites, in relevant parts, “a voltage regulator connected to the energy reserve capacitor by a polarity reversal diode and at least one current source, the voltage regulator being directly connected to the at least one ignition power module such that the voltage regulator sets a voltage at the at least one ignition power module at a predetermined level.” It is a fundamental rule of claim interpretation that the

claims should be given “the broadest reasonable interpretation” that is consistent with the interpretation those skilled in the art would reach (see M.P.E.P. 2111, citing In re Hyatt, 211 F.3d 1367 (Fed. Cir. 2000), and In re Cortright, 165 F.3d 1353 (Fed. Cir. 1999)). As a matter of definition, one of ordinary skill in the art would readily understand that a “voltage regulator” is a device which outputs a predetermined regulated output voltage irrespective of the input voltage, and this interpretation is entirely consistent with the explicit claim language of claim 7 that “the voltage regulator sets a voltage at the at least one ignition power module at a predetermined level.” To the extent the Examiner argues on p. 2 of the Advisory Action that the explicit language of claim 7 does not recite that the claimed “voltage regulator” is a device which outputs a predetermined regulated output voltage, the Examiner’s argument is incorrect since it completely contradicts the fundamental rule of claim interpretation. To the extent the Examiner contends that element 3 of Heckel is equivalent to the claimed voltage regulator, Heckel explicitly describes element 3 as being an ignition power module. (See Heckel, paragraph [0013]). In contrast to the properly interpreted “voltage regulator” limitation, the ignition power module 3 of Heckel does not regulate the output voltage to a predetermined level: instead, the ignition power module 3 of Heckel is merely described as triggering a corresponding security unit. (See Heckel, Paragraph [0013]).

To the extent the Examiner may be implicitly contending that the claimed “voltage regulator” is somehow inherently disclosed by the ignition power module 3 in Heckel, the Examiner hasn’t provided any “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” Therefore, there is no reasonable basis to conclude that Heckel teaches the features of a voltage regulator connected to an energy reserve capacitor, which voltage regulator “sets a voltage at the at least one ignition power module at a predetermined level,” as recited in claim 7.

In addition to the above, to the extent the Examiner contends that element 4 of Heckel is equivalent to the claimed “ignition power module” (see Final Office Action, p. 3), this contention is not only absolutely contradicted by the explicit disclosure in Heckel that element 4 is a “security unit,” e.g., airbag, seat belt or a roll-over bar (paragraph [0003]), but also contradicts the Examiner’s characterization of element 3 of Heckel as being a “power module.” (See Final Office Action, p. 3).

Independent of the above, to the extent the Examiner contends that Heckel teaches “a control module (see microcontroller) which selectively triggers the voltage regulator to alternatively operate as a safety semiconductor,” there is absolutely no such suggestion in Heckel that the microcontroller μ C selectively triggers the ignition power module 3 (the Examiner’s asserted equivalent to the claimed “voltage regulator”) to “alternatively operate as a safety semiconductor.”

Independent of the above, to the extent the Examiner contends that it would have been obvious to “modify the Heckel to include a diode connected to the capacitor” as taught by Rothleitner, this contention doesn’t make sense in the context of the claimed limitations which require “a voltage regulator connected to the energy reserve capacitor by a polarity reversal diode and at least one current source.” Applying the Examiner’s asserted interpretation, element 3 of Heckel is the claimed “voltage regulator,” capacitor Cs of Heckel is the claimed “energy reserve capacitor,” and item 6 or 7 is the claimed “current source.” The Examiner’s asserted modification would require connecting elements 3 and capacitor Cs by using (i) the current source 6 or 7, and (ii) a polarity reversal diode allegedly taught by Rothleitner, but why such a connection would be envisioned doesn’t make any sense.

For the foregoing reasons, the obviousness rejection of claim 7 and its dependent claim 10 over the combination of Heckel and Rothleitner should be reversed.

B. Rejections of Claim 8 under 35 U.S.C. §103(a)

Claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Heckel in view of Rothleitner and U.S. Patent No. 5,845,729 (“Smith”). Applicants respectfully submit that this rejection should be reversed for at least the following reasons.

Claim 8 depends from claim 7. As discussed above in connection with claim 7, the applied Heckel and Rothleitner references cannot support the obviousness rejection of claim 7. In addition, the Smith reference fails to cure -- and is not asserted to cure -- the critical deficiencies of the Heckel and Rothleitner references as applied against parent claim 7. For at

least these reasons, the obviousness rejection of claim 8 over the combination of Heckel, Rothleitner and Smith should be reversed.

C. Rejections of Claim 9 under 35 U.S.C. §103(a)

Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Heckel in view of Rothleitner, Smith and U.S. Patent No. 5,459,449 (“Ravas”). Applicants respectfully submit that this rejection should be reversed for at least the following reasons.

Claim 9 immediately depends on claim 8 and ultimately depends on claim 7. As discussed above in connection with claims 7 and 8, the applied Heckel, Rothleitner and Smith references cannot support the obviousness rejection of claims 7 and 8. In addition, the Ravas reference fails to cure -- and is not asserted to cure -- the critical deficiencies of the Heckel, Rothleitner and Smith references as applied against claims 7 and 8. For at least these reasons, the obviousness rejection of claim 9 over the combination of Heckel, Rothleitner, Smith and Ravas should be reversed.

D. Rejections of Claim 11 under 35 U.S.C. §103(a)

Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Heckel in view of Rothleitner and Ravas. Applicants respectfully submit that this rejection should be reversed for at least the following reasons.

Claim 11 depends on claim 7. As discussed above in connection with claim 7, the applied Heckel and Rothleitner references cannot support the obviousness rejection of claim 7. In addition, the Ravas reference fails to cure -- and is not asserted to cure -- the critical deficiencies of the Heckel and Rothleitner references as applied against parent claim 7. For at least these reasons, the obviousness rejection of claim 11 over the combination of Heckel, Rothleitner and Ravas should be reversed.

E. Rejections of Claim 13

In the “Office Action Summary” section of the Final Office Action, the Examiner indicated that claim 13 was rejected. However, since the Examiner has not provided any

detailed explanation of the basis for the rejection, the rejection of claim 13 is improper. In addition, claim 13 immediately depends on claim 9 and ultimately depends on claim 7, and the prior art references cited by the Examiner do not suggest the features of parent claim 7. For these reasons, the rejection of claim 13 should be reversed.

VIII. CONCLUSION

For the foregoing reasons, it is respectfully submitted that the final rejection of claims 7-11 and 13 should be reversed.

Claims Appendix, Evidence Appendix and Related Proceedings Appendix sections are found in the attached pages.

Respectfully submitted,

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**APPENDIX TO APPELLANTS' APPEAL BRIEF
UNDER 37 C.F.R. § 41.37**



CLAIMS APPENDIX

The claims involved in this appeal, claims 7-11 and 13, in their current form after entry of all amendments presented during the course of prosecution, are set forth below:

7. A device for supplying an ignition current from an energy reserve capacitor to at least one ignition power module, comprising:

a voltage regulator connected to the energy reserve capacitor by a polarity reversal diode and at least one current source, the voltage regulator being directly connected to the at least one ignition power module such that the voltage regulator sets a voltage at the at least one ignition power module at a predetermined level; and

a control module which selectively triggers the voltage regulator to alternatively operate as a safety semiconductor.

8. The device according to claim 7, wherein the voltage regulator is disconnectable and allows an electric current to be supplied to the at least one ignition power module as a function of an external microcontroller signal.

9. The device according to claim 8, wherein a diagnosis is provided for the safety semiconductor.

10. The device according to claim 7, further comprising a safety semiconductor including at least one power transistor.

11. The device according to claim 7, wherein the at least one current source is assigned to the voltage regulator for diagnosis of the at least one ignition power module.

13. The device according to claim 9, wherein the diagnosis is provided by the current source.

EVIDENCE APPENDIX

In the present application, there has been no evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132, or other evidence entered by the Examiner and relied upon by Appellants in the present appeal.

RELATED PROCEEDINGS APPENDIX

No appeal or interference which will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal is known to exist.